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ABSTRACT

This document consists of a student resource book entitled "CAAP in Action: The Environment" and an instructor guide entitled "CAAP in Action". CAAP is a program developed by the Close Up Foundation, a nonprofit, nonpartisan civic education organizations, in cooperation with the National Association of Elementary School Principals (NAESP). The program is funded by Burger King Corporation. CAAP is designed to help students learn about environmental problems and understand them as civic issues that can be addressed by their own personal actions. The resource book has three parts. First, in a Learning Project, students learn about the environment by reading an essay, studying a timeline, and completing work sheets. Next, students are asked to choose a topic about the environment and study it in depth by doing a Research Project. Finally, students conduct a Civic Project about the environment. This resource book is part of CAAP in Action, a special shortened, topical version of the Civic Achievement Award Program (CAAP), that was established by Congress in 1987 as an interdisciplinary supplement to the social studies curriculum for grades five through eight. The instructor's guide is designed to help teachers to implement an interdisciplinary program in which students learn about environmental problems and come to understand them as civic issues that can be addressed by their own personal actions. (DB)

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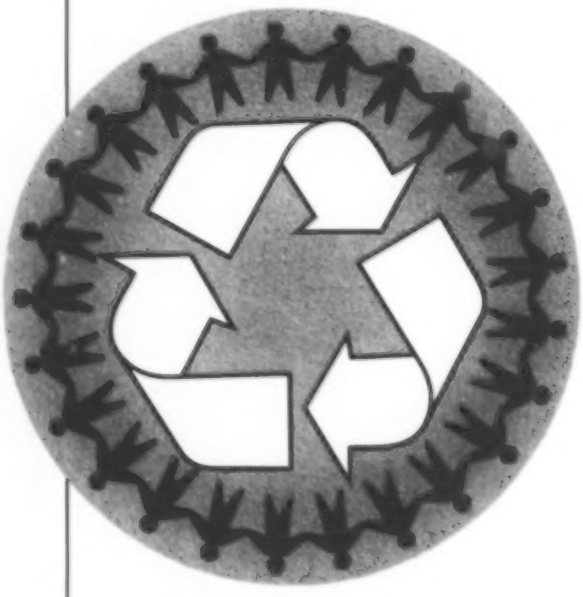
CAAP in Action: The Environment



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STUDENT RESOURCE BOOK

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BARRY J. GIBBONS
CHIEF EXECUTIVE OFFICER

January 1991

Dear Student:

Now the fun begins!

The CAAP in Action Resource Book will help you learn more about the present state of our environment, and about your role as an active citizen. Burger King Corporation and the Close Up Foundation developed these materials to help each and every one of you realize how you can have an impact on the environment.

You have the knowledge. Now it's time to apply it and soon you will realize the difference you can make on this planet earth.

Make the most of this opportunity, and please share with us your unique experiences.

Enjoy!

Sincerely,

Barry J. Gibbons

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CAAP (Civic Achievement Award Program) *in Action* was designed and developed by the Close Up Foundation, a nonprofit, nonpartisan civic education organization in cooperation with the National Association of Elementary School Principals. The program is funded by Burger King Corporation, a partner in educational achievement. Student materials were written and produced by Instructional Design Associates of Boulder, Colorado. Special thanks to John Disinger, professor, School of Natural Resources, The Ohio State University, and Gary San Julian, vice president, National Wildlife Federation, for their review and critique of the environment timeline and essay.

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CAAP in Action: The Environment

Program Overview

Sell a country! Why not sell the air, the clouds, and the great sea, as well as the earth? Did not the Great Spirit make them all for the use of his children?

—Tecumseh, Shawnee Indian chief (1810)

CAAP (Civic Achievement Award Program) *in Action: The Environment* is an opportunity for you to learn about and take action on a civic issue. A civic issue is a public issue that is of concern to a group of citizens. Different people have different ideas and opinions about civic issues. Some civic issues affect more people than others. For example, city parks are important to the people in a town or city, while state parks and recreational areas affect people throughout a state.

This year with *CAAP in Action*, you will be studying environmental problems as civic issues. The environment affects people around the world. It is an international issue, but we can work on it at any level—at school, locally, statewide, nationally, and internationally. It will require citizens taking action together at all levels to keep the environment safe for people everywhere and for generations to come.

CAAP in Action has three parts. First, in a *Learning Project* you will learn more about the environment by reading an essay, studying a Timeline, and completing some study sheets.

Next, you will choose a topic about the environment and study it in depth by doing a *Research Project*. You will probably use the library, and you might talk to people or write letters to get more information.

Finally, you will conduct a *Civic Project* about the environment. Taking action to solve problems is at the heart of good citizenship. Good citizens use their knowledge and skills to solve real problems. For your *Civic Project*, you might use the same topic you researched, or you might choose a different topic to work on. You will decide what action you think should be taken on the environmental problem you select. After you have received permission from your teacher, you can begin to take action with your classmates.

The Native American shared this elemental ethic: The land was alive to his loving touch, and he, its son, was brother to all creatures.

—Stewart Udall, former member of the U.S. House of Representatives (1963)

Now it's time to get started—good luck, good learning, and good citizenship!

Our Environment—Why and What

How would you feel if you received this letter?

Dear Loved Ones,

I hope all is well with you. Sadly, my health continues to grow worse. I regret to say the end could be near.

As you know, for some time I have had trouble breathing. The problem is getting worse. In addition, I continue to have high fevers.

Recently, I have suffered new problems. My insides have begun to deteriorate. I feel like I have swallowed something very bad that is causing a "cancer" inside me. The feeling doesn't go away.

In the past I have always been able to recover from my illness, but my immune system can no longer cope. My fluids seem poisoned, and my pain is increasing. Only because I have faith in you do I keep trying to heal myself.

My health and your well-being require that I get immediate help to save what is left of me. As responsible children and citizens, let me encourage you to work together to help me before it is too late.

Love,
Mother

Does this letter bother you? It should. The letter is written to all of us from a very special mother—Mother Earth. Mother Earth is telling us she has serious health problems. Her problems are the problems of our environment.

Our **environment** is the total of our surroundings. It includes the air we breathe, water we drink, land we live on, and people and animals with whom we live. In her letter Mother Earth tells us that our environment is polluted. **Pollution** is any harmful substance deposited in the air, water, or land that creates a dirty, unhealthy, or hazardous condition. The condition of our environment determines our quality of life.

My trash, your use of inefficient cars, someone else's water use—all make the planet less livable for the children of today and tomorrow.

—Chris Coldwell, environmentalist (1989)

Air Pollution

Forest destruction and the burning of coal, oil, and natural gas account for about half the greenhouse effect.

The letter from Mother Earth first mentions her trouble breathing. Her breathing problem results from air pollution. Motor vehicle exhaust and factory smoke produce smog that forms brown clouds over our cities. Winds often carry this pollution to areas beyond the cities. Smog makes the air unfit to breathe and can be a hazard to human health. Air pollution which contains acid and travels by wind can fall in other places as **acid rain**. Acid rain destroys lakes, forests, rivers, and crops.

The high fever Mother Earth speaks of comes from chemicals produced by motor vehicles, factories, and other sources. These chemicals form gases that get trapped in our **atmosphere**, the air up to about 50 miles above the earth. The atmosphere also traps heat given off by land and water. This trapping is called the **greenhouse effect** because the atmosphere holds heat in the same way glass in a greenhouse holds heat and keeps plants warm. As more and more gases get trapped along with the heat in the atmosphere, **global warming** occurs. Experts warn that long-term results of global warming may include a rise in the level of the seas and serious droughts.

Land Pollution

At the rate we are generating garbage, we will need 500 new landfills a year.

Mother Earth writes that she thinks she has a "cancer" growing inside her. She does. It is a cancer of trash and waste. Each day every American generates more than four pounds of trash. Most of our trash is put into dumps called **landfills**. Landfills are dirty, smelly, and sometimes a hazard. Often they pollute underground water. In addition to trash, individuals and industries dump waste such as paint thinner, pesticides, and oil into the land. This waste is called **toxic waste** because it is poisonous. Toxic waste poisons both land and water.

In Brazil an area of rain forest the size of Nebraska is destroyed each year.

One of Mother Earth's saddest and most complex diseases is the destruction of her rain forests. **Rain forests** are wet, dense jungles which exist near the Equator. They are home to half the world's forms of plant and animal life. They are the source of many products, including rubber, cooking oil, and medicines. Around the world people are cutting down rain forests very fast. In addition to destroying valuable resources, rain forest destruction increases global warming.

Water Pollution

Water is one of life's most precious resources, but Mother Earth writes that her fluids, her waters, seem poisoned. It is no wonder. We spill oil and dump hazardous waste into our lakes, rivers, and oceans. Landfills and toxic waste dumps pollute lakes, rivers, and **aquifers**—underground sources of fresh water. Polluted lakes, rivers, and oceans kill plant and animal life and endanger human health.

Only three percent of the earth's water is fresh water; 97 percent is salt water.

People: The Problem and the Solution

People—citizens—are responsible for Mother Earth's poor environmental health. Because more and more Americans are choosing to live in or near cities, we are becoming an **urban population**. Increasing numbers of people in small urban land areas create serious air, land, and water pollution. As population grows the demand for goods and services increases. More resources, such as oil, coal, water, and forests, are used to meet peoples' demands. Perhaps our most disturbing contribution to the environmental problem is our "throwaway" attitude. We buy things, use them, and throw them away without thinking about the effects on our environment. The earth's resources won't last forever.

We have the capability to recycle two-thirds of our garbage.

Just as citizens are responsible for causing environmental problems, they can also take responsibility for helping to cure the problems. How? Experts have identified three citizen actions for solving environmental problems. These actions are the three environmental "Rs"—**recycle**, **reuse**, and **reduce**.

Each of us in our daily lives makes choices that ... have a significant impact on the environment.

—Jeremy Rifkin, environmentalist (1990)

- We can **recycle** by creating ways to use things in other forms.
- We can **reuse** things by fixing them instead of throwing them away.
- We can **reduce** the amount of natural resources we use.

Care of our environment needs to become a responsibility of good citizenship.

—middle school student

Mother Earth's letter encourages us to work together as responsible citizens. We **can** become the cure instead of the disease. Are we willing to try?

Speaking the Language of Environment

Below are definitions of important words used in the essay, "Our Environment—Why and What." Beside each definition write the word which best fits it. Write one letter per blank line. You may refer to the essay for help. When you have completed all definitions, write the letters from the squares in order on the numbered lines at the bottom of the page. The mystery word you spell can be the solution to environmental problems.

1. creating ways to use things in another form _ _ □ _ _ _ _
2. an underground source of fresh water _ _ _ □ _ _ _
3. anything harmful deposited in the air, land, or water _ _ _ _ _ □ _ _ _
4. polluted rain which can destroy crops _ _ □ _ _ _ _ _
5. the last letter in the alphabet □
6. cutting back on the amount of resources used _ _ _ _ _ □
7. the kind of population living in or near cities _ _ _ _ □
8. fixing something to use over again rather than throwing it away _ _ _ □ _

MYSTERY WORD

1	2	3	4	5	6	7	8

☆ ≡ **CITIZENSHIP CHALLENGE**

Below start a paragraph describing how you think responsible citizens should treat the environment. Use additional paper to finish.

Using the *CAAP in Action* Timeline

A timeline is a story of the past. It is made up of short statements, entries, about historical events. The entries are organized in the sequence they happened. This sequence is called "chronological order."

The *CAAP in Action* Timeline on pages 10-17 focuses on our environment. Each entry begins with a dot (•) and ends with the date the event happened in parentheses (1990). Entries are organized into four major sections—history, government, economy, and culture. You can see the four headings down the side of each page. The dates of the events listed in each column of the Timeline are shown at the top of the column.

History entries include events such as explorations of the United States, actions which have damaged the environment, or actions people have taken to help the environment. Look at the history entries on page 12. In what year was the Smokey Bear symbol created?

_____

Government entries identify local, state, or national governmental actions (laws or acts) designed to protect the environment. Look at the government entries on page 10. What colony outlawed deer hunting for six months in 1639?

_____

Economy entries identify important inventions, show growth of American business, and give information about how much Americans consume. Look at the economy entries on page 15. How long was the Alaska pipeline which went into service in 1977?

_____

Culture entries describe environmental books or events or the founding of environmental organizations. Look at the culture entries on page 14. In what year was Worldwatch founded?

_____

In addition to written entries, the Timeline also provides two **Geography** entries: a table showing United States population from 1790 to 1990 on page 15 and a map of pollution in the United States on page 17.

Take some time to study the Timeline. You don't have to memorize it! As you read the Timeline, ask yourself, what environmental problems do I see in the Timeline and what would I like to learn more about?

	before 1700	1700–1799
HISTORY	• Spanish explorer Hernando Cortez introduces the horse to American plains Indians; the horse changes Indians' ways of hunting and migration patterns. (1519) • Farming begins in Jamestown, Virginia. (1618) • William Penn, founder of Pennsylvania, decrees that for every five acres of land cleared one must be left forested. (1681)	• North American furs replace overhunted Asian furs in European markets. (1700) • Daniel Boone blazes Wilderness Road through the Appalachian Mountains and opens new settlement areas. (1775) • Regular stagecoach lines running between New York, Boston, and Philadelphia increase the movement of people and products. (1785)
GOVERNMENT	• Plymouth Colony (Massachusetts) passes a law controlling the cutting and sale of timber on colony lands. (1626) • Newport Colony (Rhode Island) outlaws deer hunting for six months. (1639) • Massachusetts Bay Colony passes regulations to prevent pollution of Boston Harbor. (1647)	• Long Island (New York) creates an annual "closed season" during which deer cannot be killed. (1706) • New York Colony creates a closed season on the hunting of certain game birds. (1772) • Congress passes the Timber Reservation Act. The law sets aside money to purchase and reserve timberland in Georgia for building naval warships. (1799)
ECONOMY	• The first American saw mill is built in Maine to provide lumber for building ships. (1634) • The first commercial fishing corporation is formed in New York. (1675) • The first American paper mill opens in Pennsylvania. (1690)	• Whaling increases along New England coast. (1712) • Benjamin Franklin invents the Franklin Stove, which makes fireplaces more efficient. (1742) • Benjamin Franklin begins his first experiments with electricity. (1747) • An automatic flour mill in Maryland increases flour production. (1785)
CULTURE	• *Account of Two Voyages to New England* by John Josselyn is published. In it Josselyn, a scientist, describes his observations of the landforms and plant life in America. (1674)	• The American Academy of Arts and Sciences is founded by scholars in Boston to promote national and international research. (1780) • *Travels through North and South Carolina...*, one book in a series by William Bartam, is published. The books describe plants, animals, and natural features of the southeastern United States. (1791)

HISTORY

- Meriwether Lewis and William Clark lead an expedition to the Northwest. The exploration opens this area to settlement. (1804-06)
- Connecting the Hudson River and Lake Erie, the Erie Canal opens a water route from the East to the Midwest. (1825)
- George Catlin, an artist known for his American Indian portraits, proposes setting aside land for a national park. (1832)
- Lead by J. Sterling Morton, citizens of Nebraska celebrate the first Arbor Day by planting trees. (1872)
- Overhunting by professional hunters reduces the number of buffalo on the American plains from an estimated 60 million to only 541 animals. (1889)

GOVERNMENT

- The United States buys from France the Louisiana Purchase, a land area which doubles the country's size. (1803)
- In a landmark decision (*Martin* v. *Waddell*), the Supreme Court decides that because wildlife belongs to all people, governments can regulate hunting. (1842)
- The Department of Interior is established by Congress to develop and protect natural resources. (1849)
- President Abraham Lincoln signs the first Homestead Act which offers land at a small cost to settlers. The act opens up public land for settlement. (1862)
- Congress sets aside Yellowstone Park for public use and begins the National Park System. (1872)
- Passing the River and Harbor Act, Congress makes it illegal to dump polluting matter into waterways. (1899)

ECONOMY

- Robert Fulton's steamboat increases trade on the Hudson River. (1807)
- The agricultural fair movement begins and starts scientific farming. (1807)
- Samuel Morey patents the internal combustion engine, leading the way to modern automobiles and extensive fossil fuel use. (1826)
- Cyrus McCormick shows his reaper, a machine which allows farmers to harvest larger areas of wheatland. (1831)
- The world's first transcontinental railroad is completed, connecting the East and West Coasts of the United States. (1869)
- Thomas Edison invents the first practical incandescent "lamp" which uses electricity for lighting. (1879)
- The California Electric Light Company of San Francisco begins selling electricity to individuals. (1879)

CULTURE

- John James Audubon, an artist and naturalist, begins the first scientific study of American birds. (1803)
- John Chapman, known as the mythical Johnny Appleseed, travels through the Midwest planting trees. (1805-45)
- *Nature* by Ralph Waldo Emerson, a philosopher, is published. The book describes Emerson's philosophy on the beauty and value of nature. (1836)
- Henry David Thoreau's book, *Walden*, is published. It describes living in harmony with nature. (1854)
- *Man and Nature* is published. Its author, George Perkin Marsh, calls attention to the need for conservation, waste treatment, and care of farmland. (1864)
- The Sierra Club is founded by John Muir to preserve California's natural beauty. (1892)

	1900–1929	1930–1959
HISTORY	• The National Commission for the Conservation of Natural Resources is appointed by President Theodore Roosevelt to inventory the nation's natural resources. (1908) • The passenger pigeon, whose population once numbered in the millions, becomes extinct. (1914)	• Boulder Dam, later named Hoover Dam, is completed and creates the nation's largest reservoir. (1936) • The Smokey Bear symbol is created by the U.S. Forest Service and popularizes the message, "Only you can prevent forest fires!" (1944) • First atomic bomb is exploded in New Mexico. Scientists recognize the potential of nuclear power as a source of energy. (1945)
GOVERNMENT	• In the federal government's first investigation of pollution, Public Health Service workers examine water pollution in the Great Lakes. (1912) • The National Park Service is established by Congress to promote and regulate national parks. (1916) • The National Forest Service designates the country's first extensive national wilderness area, the Gila National Forest, in New Mexico. (1924)	• Prompted by President Franklin Roosevelt, Congress creates the Soil Conservation Service to involve the federal government in controlling soil erosion. (1935) • Called the "best thing that has happened to wildlife," the Federal Aid in Wildlife Restoration Act passes Congress. The law provides money for restoring wildlife from taxes on hunting equipment. (1937)
ECONOMY	• The first great oil discovery in Texas begins the oil industry. (1901) • Wilbur and Orville Wright make first flights of a power-driven airplane and begin the age of air travel. (1903) • Henry Ford begins manufacturing his Model T car at a reasonable cost. (1908) • Leo H. Baekeland creates the first all-synthetic plastic. The invention spurs the growth of electrical and oil industries. (1909)	• The first electronic computer is introduced and prompts worldwide growth in industry. (1946) • The transistor is invented and promotes the production of electrical products. (1947)
CULTURE	• In the book *History of the Standard Oil Company,* Ida M. Tarbell draws attention to the environmentally careless practices of the company. (1904) • Upton Sinclair's book, *The Jungle,* is published. Sinclair's story of unclean practices in the Chicago stockyards helps build support for the Pure Food and Drug Act. (1906)	• The National Wildlife Federation is founded and begins supporting protection of wildlife. (1936) • Marjorie Kinnan Rawlings wins the Pulitzer Prize for her book, *The Yearling,* about a boy's love of nature. (1939)

HISTORY

- Donora, Pennsylvania, experiences severe air pollution from industrial waste and coal-burning furnaces. Twenty die and 14,000 become ill. (1948)
- The first atomic reactor to demonstrate the use of nuclear energy is tested in Arco, Idaho. (1951)
- Construction of the nation's Interstate Highway System is proposed by President Eisenhower. (1954)

- *Apollo 8,* the first manned space flight to circle the moon, produces dramatic photos of earth. The photos enable people to visualize the earth as a planet in space. (1968)
- A major oil spill off the coast of Santa Barbara, California, dramatizes the problem of water pollution. (1969)

GOVERNMENT

- Congress passes the Water Pollution Control Act which regulates water pollution across state lines with special emphasis on sewage disposal in water treatment plants. (1956)
- The United States and 11 other countries sign a treaty to reserve Antarctica mainly for research. (1959)

- Passage of the Solid Waste Disposal Act marks the beginning of the federal government's role in dealing with solid wastes. (1965)
- Congress passes an antipollution law that allows the federal government to set emission controls on cars. (1965)
- Passing the Water Pollution Control Act, Congress seeks to improve the quality and value of our water resources. (1965)

ECONOMY

- Travelers fly more than 400 million paid miles by airplane within the United States. (1950)
- More than 6,665,000 cars are produced in the United States. (1950)
- The opening of the St. Lawrence Seaway connects the Great Lakes to the Atlantic Ocean and greatly increases shipping. (1959)

- American auto companies begin to make compact cars to compete with small, foreign cars. (1960)
- Paid air travel within the United States exceeds 800 million miles, twice the number of miles traveled in 1950. (1960)
- Americans spend more than one trillion dollars (measured in 1982 dollars) on personal goods and services. This is twice the amount spent in 1940. (1960)

CULTURE

- American naturalist Aldo Leopold's *Sand County Almanac* is published. The book is a collection of essays on conservation. (1949)

- In her book *Silent Spring,* Rachel Carson provides a well-researched call against careless use of pesticides and other chemicals. Publication of the book leads to restrictions on the use of harmful chemicals. (1962)

HISTORY

- The first Earth Day is held on April 22 to promote concern about our environment. (1970)
- University of California scientists report that the group of chemicals called chlorofluorocarbons, CFCs, can damage the earth's ozone layer. (1974)
- Scientists estimate that one species becomes extinct every three days. (1975)

GOVERNMENT

- The Endangered Species Preservation Act authorizes the secretary of interior to compile a list of threatened wildlife and to stop them from being traded between countries. (1966)
- Passing the National Environmental Policy Act, Congress establishes a national policy to eliminate damage to the environment and enrich environmental understanding. (1969)
- Congress passes the "Clean Air" Act, which sets up a nationwide program to reduce air pollution to acceptable levels by 1975. (1970)
- President Richard Nixon establishes the Environmental Protection Agency (EPA) to enforce national standards of environmental quality. (1970)

ECONOMY

- Travelers fly more than two billion paid miles within the United States, more than twice the miles traveled in 1960. (1970)
- Middle Eastern oil producing countries limit the amount of oil shipped to the United States. The cutback results in higher gasoline prices and long lines of cars at service stations. (1973)

CULTURE

- The *Population Bomb* by biologist Paul Ehrlich is published. In the book Ehrlich warns that overpopulation is the most important cause of hunger and environmental problems. (1968)
- Greenpeace, an international environmental organization, is founded. The group uses direct action to try to stop harmful environmental practices. (1969)
- Worldwatch Institute, an organization which studies global environmental issues, is founded. (1974)
- The Cousteau Society is founded by Jacques-Yves Cousteau, a French ocean scientist, to protect and improve the quality of life for present and future generations. (1974)

1970–1979 continued

- The Love Canal region near Niagara Falls, New York, is declared by President Carter to be a disaster area because of toxic wastes dumped there. (1978)
- A serious nuclear accident occurs at Three Mile Island, a nuclear power plant in Pennsylvania. A five-mile area around the plant is contaminated. (1979)

HISTORY

- Passing the Resource Recovery Act, Congress emphasizes recycling and methods for recovering resources. (1970)
- Congress passes a pesticide control act which in time bans all major uses of the chemical pesticide DDT. (1972)
- Congress approves the plan to build an 800-mile oil pipeline across Alaska. (1973)

- The Convention on International Trade of Endangered Species of Wild Fauna and Flora is ratified by the United States. Signing countries agree to restrict illegal trade of endangered plants and animals. (1975)
- The Toxic Substance Control Act passed by Congress forbids the use of polychlorinated biphenyls (PCBs) because they do not break down in the environment and are linked to cancer. (1976)

GOVERNMENT

- The Minnesota Mining and Manufacturing Corporation, 3M, begins its Pollution Prevention Days program in which tons of pollutants are recycled. (1975)
- The 800-mile, trans-Alaska oil pipeline goes into service. (1977)

United States Population
1790 – 1990
(rounded, selected years)

Year	Population
1790	3,900,000
1850	23,200,000
1900	76,000,000
1950	150,700,000
1960	178,500,000
1970	203,000,000
1980	226,500,000
1990	245,900,000

Source: *Statistical Abstract of the United States*

ECONOMY

- *Small is Beautiful* by E.F. Schumacher is published. The book examines the relationship between people, nature, and technology. (1975)
- Smokey Bear, the animal on which the U. S. Forest Service's longtime fire prevention symbol was based, dies at the National Zoo. (1976)

CULTURE

HISTORY

- Scientists conclude that between 1945 and 1985 over half of the world's rainforests were destroyed. (1985)
- Adopt-A-Highway, a program in which citizen volunteers clean up designated sections of highways, begins in Tyler, Texas. (1985)
- Using satellite data, researchers confirm that a hole exists in the earth's ozone layer. (1987)

GOVERNMENT

- Congress passes an act commonly called "Super Fund." It provides money to clean up old hazardous waste sites and allows the government to sue polluters for cleanup expenses. (1980)
- The United States joins with two dozen other nations in signing an agreement to protect the earth's ozone layer by reducing the use of CFCs. (1987)

ECONOMY

- Americans spend more than two trillion dollars (measured in 1982 dollars) on personal goods and services, doubling their 1960 consumption. (1980)
- The three big automobile makers set a new one-year record in sales of new cars. (1984)
- The estimated cost to clean up the *Exxon Valdez* oil spill is estimated at more than two billion dollars. (1989)

CULTURE

- The Canadian Coalition on Acid Rain, an organization of environmental groups, works to promote clean air in Canada and the United States. (1981)
- The movie, *China Syndrome,* dramatizes the story of a nuclear accident. (1981)
- The book, *Extinction: The Causes and Consequences of the Disappearance of Species,* is published. In it authors Paul and Anne Ehrlich examine reasons for the extinction of various species. (1981)

HISTORY

- Garbage, including medical waste, washes up along East Coast beaches. (1988)
- Scientists predict that human-made changes in the atmosphere may result in global temperature changes of 3°F to 8°F by the middle of the next century. (1989)
- The oil tanker, *Exxon Valdez*, hits a reef in Alaska's Prince William Sound, spills 11 million gallons of oil, and causes thousands of animals to die. (1989)

GOVERNMENT

- President Bush calls for the passage of clean air laws to reduce air pollution by 75 percent by the year 2000. (1989)

ECONOMY

- Air and water pollution controls cost the government and industry 526 billion dollars between 1981 and 1989; of this, 192 billion dollars is spent on sewage control and treatment. (1989)

CULTURE

- Rock stars, including Elton John, Diana Ross, Herbie Hancock, and John Denver, participate in a concert to raise money for environmental protection. (1989)
- Stephen Schneider's *Global Warming: Are We Entering the Greenhouse Century?* is published. In the book Schneider, a scientist, discusses the potential disasters from global warming. (1989)

1990–1999 continued

- Seabrook Nuclear Power Plant in New Hampshire begins operating at full power despite demonstrations by protestors against nuclear power. (1990)
- The 20th anniversary of Earth Day is celebrated on April 22nd. Supporters urge people to join the continuing effort to solve environmental problems. (1990)
- In his State of the Union address, President Bush calls on American youth to plant one billion trees a year for ten years to reduce the threat of global warming. (1990)

Some 1990 United States Pollution Problems
KEY
- toxic chemicals in fish
- smog health risks
- less than 5 years landfill space
- dangerous toxic waste sites
- area of highest acid rain
1 inch = 310 miles
Base map provided courtesy of Rand McNally

Reading the Timeline

Use the *CAAP in Action* Timeline to answer the five questions below.

1. Where did farming begin in 1618?

   _____

2. In 1849 Congress established what government department?

   _____

3. How much did Americans spend on goods and services in 1960?

   _____

4. In 1975 what company began Pollution Prevention Days?

   _____

5. What did President Bush ask American youth to do in 1990?

   _____

Conservation is using natural resources in a way that assures they will be available for future generations. Conservation is an important theme throughout the Timeline events. Beside each date below, write a short description of the conservation event that took place in that year.

1681 _____

1864 _____

1935 _____

1949 _____

☆ ≡ **CITIZENSHIP CHALLENGE**

Study the population table on page 15. Keeping the country's population growth in mind, read through the economy entries in the Timeline. On a separate sheet of paper, write a paragraph describing the relationship between population growth and the amount of goods and services people buy.

Causes and Effects

Often one event or action causes or allows other events to happen. For example, the invention in 1831 of Cyrus McCormick's reaper may have encouraged farmers to overuse their land, which later made necessary, in part, the creation of the Soil Conservation Service. In the questions below, the event described may have been the reason or cause for another event to occur at a later time. Answer each question by using your Timeline.

1. Benjamin Franklin's experiments with electricity may have led to what 1879 event in San Francisco?

   _____

2. The Louisiana Purchase in 1803 may have lead to the completion of what railroad in 1869?

   _____

3. *Silent Spring,* a book by Rachel Carson published in 1962, may have encouraged the passage of what kind of government act (law) in 1972?

   _____

Our national government has passed several acts to stop or clean up environmental damage. Below are two years when such acts were passed. Use your Timeline to find the name of each act and write its name on the line to the right of the date. Below the name of the act, identify a reason you think the act was passed.

1956 _____

Reason: _____

1976 _____

Reason: _____

☆ ≡ **CITIZENSHIP CHALLENGE**

Study the United States pollution map on page 17. On another sheet of paper write a letter to a fellow citizen which describes our country's pollution problems in 1990. In your letter encourage the citizen to become concerned about the environment.

My Environmental Diary

Study the cartoon below. As you do, think about the actions you took today which may harm the environment.

Cathy
BY CATHY GUISEWITE
BZZZZ
YAP YAP
YAP YAP YAP
Z Z Z Z
DIARY OF AN ENVIRONMENTALIST
6:45: RIP WATER-SAVING DEVICE OFF SHOWER IN ORDER TO GET ENOUGH WATER TO WAKE UP.
7:10: SIMULTANEOUSLY RUN BLOW-DRYER, HOT ROLLERS, TV, SEVEN LIGHT BULBS, CEILING FAN AND IRON.
7:40: READ THREE HEADLINES OF A 98-PAGE NEWSPAPER. FLING PAPER, DOG FOOD CAN AND JUICE BOTTLE INTO TRASH, SWEARING TO SORT IT OUT LATER.
7:45: MAKE WHOLE POT OF COFFEE FOR ONE GULP ON WAY OUT DOOR.
7:50: TEAR THROUGH ROLL OF PAPER TOWELS TRYING TO REMOVE COFFEE STAIN FROM BLOUSE.
7:55: SCREECH OUT OF DRIVEWAY, SPEWING FUMES AND MOWING DOWN SMALL TREE.
SCREECH
SPLAT
8:29: SIT AT DESK, USE UP TWO LEGAL PADS TRYING TO WRITE ONE SENTENCE EXPRESSING WHAT WAS SUSPECTED ALL ALONG...
THE EARTH WOULD HAVE BEEN A BETTER PLACE IF I HADN'T GOTTEN OUT OF BED TODAY.
© 1990 Universal Press Syndicate

CATHY COPYRIGHT 1990 UNIVERSAL PRESS SYNDICATE. Reprinted with permission. All rights reserved.

On the lines below, list four environmentally harmful actions you took today. On a separate sheet of paper, draw a cartoon diary showing the four actions. Add other actions to your cartoon if you wish.

_____ _____

_____ _____

☆ ≡ CITIZENSHIP CHALLENGE

Describe one action you will take tomorrow to improve the environment.

_____

Trade-offs and the Common Good

In the essay you learned the three "Rs" of taking action to improve our environment—**recycle**, **reuse**, and **reduce**. Taking these actions usually contributes to the **common good**—the good of all citizens, not just yourself. However, when we take an action to improve our environment, we often give up something. For example, if you decide to repair your bicycle to reuse it, your trade-off may be giving up a new bicycle.

Below are five actions which will help improve our environment. Following each action are two columns. In the first column, identify which "R" the action represents—**recycle**, **reuse**, or **reduce**. In the second column, describe the trade-off you would make to take the action.

ACTION	WHICH "R"?	MY TRADE-OFF
1. to shut off all our air conditioning at home and school		
2. to buy only rechargeable batteries for games/toys		
3. to turn off the TV for two hours each evening between 7 p.m. and 10 p.m.		
4. to help sort school lunch room trash into paper, plastic, glass, and aluminum once a month		
5. to do school assignments on writing paper which has already been used on one side		

☆ ≡ **CITIZENSHIP CHALLENGE**

From the list above, select one action you are willing to take. On another sheet of paper write a short paragraph explaining how you would go about taking the action. Describe how the action would contribute to the common good.

Mapping Environmental Problems

Review the map on page 17 of the Timeline. It shows five environmental problems which occur in various locations across the United States.

Another environmental problem in many areas of our country is the threat of extinction for certain wildlife (animals which live in the wild). The life of many of these animals is in danger because the animals' habitats, homes, are being destroyed by people who want more land for housing or farming. Some animals die from eating plants sprayed with pesticides. Other animals are killed wrongly by illegal hunters. As a result of these and other factors, many kinds of animals are becoming **endangered species**. "Endangered" means in danger of death. "Species" is a group of similar animals (or plants) which live in a natural habitat.

Below is a list of animal species which are endangered in our country. Beside each animal's name is a list of the states in which that specie is threatened. Read the list and identify the states by their abbreviations.

	American Alligator—FL, GA, AL, MS, LA, NC, SC, AR
	Bald Eagle—AK, CA, OR, CO, WY, MT, TX, UT, WA, SD
	Brown Pelican—NC, SC, GA, AL, MS, LA, CA
	Peregrine Falcon—NC, DE, NJ, CA, VA, NY, MD, CO, DC
	Timber Wolf—MN, MI, WI, MT, ID, WY

You can create an endangered species map by using the information in the above list and the United States outline map your teacher provides. First, create a symbol for each animal and draw it in the box beside its name in the list above. On your United States outline map, draw a symbol for each animal in every state where that animal is endangered. When you have finished, give your map a title.

☆ ≡ CITIZENSHIP CHALLENGE

Part of good citizenship is becoming informed about problems. How could you could find out additional information about endangered species in your state? What questions should you ask about the animals? Write your questions on other paper.

The Environment and Your State

Study the map of your state your teacher provides. The map shows your state's boundaries, major bodies of water, some highways, some cities and towns, and the state capital. Use the map and its key to help you learn more about your state and its environment.

1. Name the bodies of water—rivers, lakes, and oceans—shown on the map within or bordering your state.

   _____

2. Your map includes only some of the cities and towns in your state. Is your community identified on the map? If not, make a city symbol for it and write its name beside the symbol.

3. Turn to the map on page 17 of your Timeline. If it shows pollution in your state, transfer the information from that map to your state map. Add symbols from the United States Endangered Species map you created in Study Sheet VI if it showed endangered animals in your state.

   Study the state pollution map you created. Does it show major forms of pollution or endangered animals in your state? If so, what kinds and where are they located?

   _____

   _____

   If your map does not show major areas of pollution in your state, identify some areas where you think major pollution might develop in the future. Explain reasons for your answers.

   _____

   _____

☆ ≡ CITIZENSHIP CHALLENGE

Identify three other kinds of environmental problems in your state and the places in which the problems occur. For information you may wish to consult your teacher or another adult, search the library, and read local newspapers . When you have finished your research, create a symbol to stand for each problem. Draw these symbols on your state map at the appropriate locations.

Research Project

In the essay, Timeline, and study sheets, you learned about many environmental problems. Now you have the opportunity to learn more about an environmental topic. On your own or with several classmates, you will conduct a *Research Project.* Research is finding information about a topic, organizing and analyzing the information, and sharing the results with others. Research often suggests an effective action to correct a problem.

In a time of ... change, it is more true than ever that knowledge is power.

—John F. Kennedy, President (1962)

You can find many sources of information about the environment to use in your research. Your school and community libraries are good places to find books, magazines, and newspapers with information on various topics. People and organizations committed to improving our environment have written reports, pamphlets, and posters which you can obtain by contacting them. Local and state government agencies, as well as your state and national legislative representatives, will gladly supply you with information. You may also wish to interview community leaders or other citizens to learn their views on particular issues.

In doing your *Research Project,* you should follow four steps. **Step 1** Select a topic of interest and narrow it down to a few questions you wish to answer. **Step 2** Decide how you will do your research. **Step 3** Do your research, taking good notes as you gather information. **Step 4** Prepare your research results to share with others.

To help you with Step 1, selecting a topic, consider the examples below. You may select one of these or another topic of interest to you for your *Research Project.*

- how motor oil, tires, aluminum, paper, or glass are recycled
- methods of converting trash and garbage to electricity
- effects of chloroflurocarbons, CFCs, on the atmosphere
- ways to maintain an energy efficient car or house
- how people and land may be affected by global warming
- the rate at which natural resources are being used up

The most alarming of man's assaults upon the environment is the contamination of the air, Earth, rivers, and sea ...

—Rachel Carson, writer and environmentalist (1962)

Research Planning Sheet

On which environmental topic will you do your research?

_____

_____

What is your goal in studying this topic? That is, what do you wish to learn from your study?

_____

_____

What three questions do you want to answer about your topic?

_____

_____

_____

List the ways you plan to find answers to your questions. Your list may include the names of people you wish to interview, the books or magazines you will read, and the people or organizations you will contact.

_____

_____

_____

_____

_____

In what form do you plan to present your findings? Here are some possibilities: a written report, a news article, a poster, a pamphlet, an oral report, a videotape, a slide show.

_____

_____

Make a schedule for your *Research Project.* List all the steps you will take. Steps may include doing library research to find materials, contacting a government or organization official, making appointments to interview people, and preparing your results. Decide how much time each step will take and when you will do it.

Research Step	Amount of Time Needed	When I Will Do It

When you have completed this Research Planning Sheet, show it to your teacher for approval.

Teacher Approval

_____ **Date** _____

Civic Project

The title of this program is *CAAP in Action*. You are now ready for the "action" part of the program—the *Civic Project*. You and your classmates have the opportunity to become involved citizens who help improve the environment. In the *Civic Project*, you will work in a small group or as an entire class.

As you know, citizens in our democracy have a responsibility to make all our lives better—to promote the **common good**. Because environmental problems affect us all, concerned citizens need to help prevent or find solutions to these problems. Our community is a good place to start.

You have learned that some environmental problems are worldwide problems. Yet, you can't really take on the whole world. Or can you? People concerned about the environment often use this helpful slogan: **Think Globally... Act Locally**! This slogan means you can take effective action in your own community or state.

Steps to Take

As you plan your *Civic Project*, keep these steps in mind.

Step 1 **Choose an environmental problem that is interesting and important to you and your classmates.** The problem should be of concern to a group of citizens not just an individual. Keep in mind that people will have different ideas and opinions about how bad the problem is and what to do about it.

Step 2 **Study the problem carefully.** What are the causes? Who is affected? What are the proposed solutions to the problem?

Step 3 **Plan and take action.** What action do you plan to take? What, specifically, needs to be done? Who will do what? When will it be done? What is expected to happen as a result of the action?

The first requisite of a good citizen in this Republic of ours is that he shall be able and willing to pull his weight.

—Theodore Roosevelt, President (1902)

Action Ideas

Mother Earth's letter in the essay encourages us to work together to improve our environment—to become the cure for the problem. This means that you and your classmates can work together to do something for your community or state. Here are just a few examples of projects. Perhaps they will help you think about a project you want to do.

- You and your friends notice that too much trash is being thrown away at your school. You decide to work out a plan with your school's parent-teacher organization to reduce the amount of school trash.
- A local newspaper reports that only a few people in your community recycle newspapers. You decide to present a plan to your city council to increase community participation in newspaper recycling.
- Many dead birds are discovered near your school. You decide to build a school wildlife refuge.
- From a television report, you learn that two industries in your state are polluting a river. You decide to organize a letter-writing campaign to request that state government officials stop the polluters.
- A survey shows that many people in your community really don't know what they can do to improve the environment. You decide to develop a resource guide of community organizations whose members work to improve the environment.
- You discover that your fellow students know very little about conservation. With your principal you create a conservation bulletin board for the school to which all students can contribute.

... only by a deep patriotic devotion to one's country can there be a hope of the kind of protection of the whole planet [we need] ...

—Margaret Mead, anthropologist (1970)

There are many ideas like these your group may choose to work on for your *Civic Project.* Think about environmental problems in your own community or state. The action you decide on should come from your interest, your knowledge of your community or state, and careful study of the problem. Use the next two pages to help you plan your project.

Civic Project Information Sheet

Step 1 Defining the Problem

On what local (community or state) environmental problem do you want to take action?

Why is this a local or state problem?

What do you know about the problem? Be specific.

What do others say about the problem?

What research will you need to do to find out more about the problem? (Perhaps you can use some information from your *Research Project.*)

Step 2 Studying the Problem

Answer the following questions based on your research.

What causes the problem?

Who is affected by the problem?

_____

_____

What are three possible solutions to the problem? Use additional paper, if necessary.

_____

_____

_____

Step 3 Planning and Taking Action

What action do you plan to take?

_____

On the lines below, describe your action plan.

What will be done?	**Who will do it?**	**By when?**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

How will this action contribute to solving or preventing the problem?

_____

_____

Before you take action, show your plan to your teacher. When you have approval, proceed with your project.

Teacher Approval

_____ **Date** _____

CAAP in Action Mastery Test

A. Match the date in the left column with the event in the right column to put the events in order. You may use the Timeline for help.

_____	1849	1. Twentieth anniversary of Earth Day is celebrated.
_____	1892	2. Henry Ford begins manufacturing the Model T car.
_____	1908	3. Water Pollution Control Act is passed.
_____	1956	4. Department of Interior is established.
_____	1990	5. Sierra Club is founded by John Muir.

B. Place a **T** beside each true statement and an **F** beside each false statement below.

_____ 1. Our environment includes only the air we breathe.

_____ 2. Rain forests are wet, dense jungles near the Equator.

_____ 3. We have no endangered species in the United States.

_____ 4. The **common good** means improving the lives of all citizens.

_____ 5. Citizens can become the cure for environmental problems.

C. Beside each statement below indicate whether the action is best described as **recycle**, **reuse**, or **reduce**.

_____ 1. Repairing a car instead of buying a new one.

_____ 2. Turning motor oil into fuel for ships.

_____ 3. Using solar heating instead of heating oil.

D. Write one conclusion you drew from your research on an environmental topic.

_____

_____

E. Name one action you plan to take to **Think Globally... Act Locally**.

_____

_____

Glossary

acid rain—rain which contains acid caused by air pollution; destroys forests and bodies of water and damages crops

aquifer—an underground water source, usually a river or seepage, that provides water for human and animal use from wells or springs

chlorofluorocarbons (CFCs)—any of a group of chemicals that contains chlorine, fluorine, and carbon; often used as refrigerants and cleaning solvents. When released into the air, CFCs destroy the ozone layer that protects earth.

conservation—the use of natural resources in a way that assures they will be available for future generations

environment—the total of all our surroundings—air, water, land, people, and animals—which influence how we live

global warming—a condition which occurs when the atmosphere begins to trap more heat than normal; caused by pollution

greenhouse effect—a condition in which the earth's atmosphere traps heat in the same way as greenhouse glass

hazardous waste—anything thrown away that is harmful to human beings and the environment

landfill—disposing of garbage and trash by burying and covering the waste with soil

ozone depletion—the partial destruction by CFCs and other pollution of the earth's ozone layer; the gaseous ozone layer protects the earth from the sun's harmful ultraviolet rays

pesticide—any chemical used to control the growth of plants and animals; often harmful to people

pollution—harmful substances deposited in the air, water, or land that cause a dirty, unhealthy, or hazardous condition

rain forest—a tropical woodland with over 100 inches of annual rainfall and marked by lofty broadleafed trees that form a canopy; usually found near the Equator

smog—air pollution that engulfs most major U.S. cities; caused by car exhaust and factory emissions

toxic waste—poisonous, dangerous, and often lethal waste; similar to hazardous waste

urban population—people living in a city and nearby area in which the total population numbers more than 50,000 people

CAAP in Action Instructor Guide

January 1991

A message from Barry Gibbons, Chief Executive Officer of Burger King Corporation

Our children are a vital link to our future. That's why Burger King Corporation has committed its resources to the education and development of our youth. Sensitizing our young people to current issues, including the preservation of our environment, is key as we move into the 1990s. Burger King Corporation's sponsorship of *CAAP in Action* is symbol of our ongoing commitment. We applaud your dedication to the country's next generation and know that you will share with us your accomplishments and successes.

Sincerely,

Barry J. Gibbons

Welcome to CAAP in Action! *All of us at the Close Up Foundation are delighted that you decided to take part in this new program designed to develop civic knowledge and skills for fifth- through eighth-grade students. This year,* CAAP in Action *uses the environment as the topic to help some 500,000 students understand their rights and responsibilities as citizens. In future years, other topics, such as peace, health, or poverty, will be the focus for* CAAP in Action.

CAAP in Action *is a special shortened, topical version of the Civic Achievement Award Program (CAAP), which was established by Congress in 1987 as an interdisciplinary supplement to the social studies curriculum for grades five through eight. The Close Up Foundation, a nonprofit, nonpartisan, civic education organization, created and continues to conduct CAAP in cooperation with the National Association of Elementary School Principals. Educator response to CAAP has been so favorable that* CAAP in Action *was developed to help even more students learn about citizenship. Both CAAP and* CAAP in Action *are funded by Burger King Corporation.*

For more information about the Close Up Foundation or CAAP and to let us know about your CAAP in Action *projects, please write to the Close Up Foundation, Civic Achievement Award Program, 44 Canal Center Plaza, Alexandria, VA 22314, or phone 1-800-356-5136.*

Introduction

Government officials, leading members of the business community, and educators continue to voice their alarm about the lack of awareness among young people about what it means to be a citizen in a representative and participatory democracy. Many young people are not voting nor are they choosing government service as a career path.

Changing demographics suggest that, as the United States enters the twenty-first century, it is imperative that widely diverse groups learn to participate together to achieve mutual goals. Young people need role models from their schools and communities who will provide examples of cooperation. They need opportunities to learn how they can take part as citizens. Only through positive participation are young people likely to support community values.

Participatory citizenship demands that citizens become informed about and involved in civic issues. *CAAP (Civic Achievement Award Program) in Action: The Environment* is the first in a series of curricular supplements that encourage students to learn about a particular civic issue and then take civic action on the issue. *CAAP in Action* is designed to demonstrate to students that responsible citizenship crosses the lines of academic disciplines and requires knowledge of history, government, economics, geography, culture, and current events, as well as science and technology in the case of the environment.

How *CAAP in Action* Works

CAAP in Action consists of three projects:

The *Learning Project* provides students with a common body of knowledge about the environment from a citizen's point of view. They read an essay, study a Timeline, and complete study sheets.

The *Research Project* teaches students that the ability to find and analyze information and communicate it to others is necessary for full participation in our democracy. They gather and process information about an environmental topic and report their findings.

The *Civic Project* encourages students to become informed and to develop opinions about an environmental problem. They choose a problem, identify alternatives for addressing it, select a preferred alternative, and, with a group of their classmates (and your support and approval), engage in civic action and community service to help alleviate the problem.

Students receive the *CAAP in Action* award certificate for participating in the program. These certificates are included with the classroom set of free materials.

Implementation Alternatives

CAAP in Action is designed to be incorporated into the school day or used as an extracurricular activity. It can be implemented in a variety of ways including with the entire class during the regular school day, for extra credit, as part of a library program, or as an enrichment program before or after school. The student workbook follows an easy-to-use format conducive to individual, small group, or adult-guided activity. It is anticipated that the program can be completed in three to six weeks, depending on the implementation alternative used.

Because *CAAP in Action* is a citizenship program that focuses on both the knowledge and skills all citizens need, the materials are appropriate for students of all ability levels and ask that students think about issues from the viewpoint of "citizen," particularly a citizen who promotes the common good. This perspective allows for the involvement of parents and other community members who share with young people this important role of citizen. To help promote such involvement, a parent letter explaining *CAAP in Action* is included at the end of this guide. You are free to copy it and send it home with your students.

Conducting *CAAP in Action: The Environment*

The program is designed, first, to build a common body of knowledge about the environment from an interdisciplinary, civic perspective (*Learning Project*); next, to develop skills in becoming more fully informed about a specific environmental issue

(*Research Project*); and finally, to encourage the careful study of an environmental problem leading to planned civic action (*Civic Project*).

Since each project builds on the one preceding, it is best to follow the sequence found in the student workbook unless your students already have an adequate content base or are skilled in doing research. You should feel free to add to and adapt the materials in a way that most successfully meets your students' needs. This instructor guide will offer a few suggestions about additional learning activities that you might consider using.

The student workbook begins with a program overview to set the context for the program and to establish that the materials will be confronting environmental issues from the citizen's vantage point. Following the introduction, the workbook moves into the *Learning Project*.

Learning Project

The *Learning Project* uses an essay, an interdisciplinary Timeline on the environment, maps, and seven study sheets to help build a common body of knowledge. Each study sheet ends with a CITIZENSHIP CHALLENGE to encourage students to relate what they are learning to their rights and responsibilities as citizens.

Essay and Study Sheet I

The essay, "Our Environment—Why and What," introduces students to terms having to do with the environment and provides a conceptual framework within the context of citizenship. Increasing demand for resources, population growth, population density in urban areas, and a "throw away" attitude are identified as major causes of environmental problems. The essay can be a springboard for class discussion about the role of citizens in dealing with environmental issues.

Study Sheet I, "Speaking the Language of Environment," takes definitions from the essay and asks students to write the word that best fits the definition.

Answers to Study Sheet I are:

1. recycle
2. aquifer
3. pollution
4. acid rain
5. "z"
6. reduce
7. urban
8. reuse

Mystery Word: citizens

Students may need additional paper to write the answer to the CITIZENSHIP CHALLENGE.

Study Sheet I does not cover all the words mentioned in the essay, nor does it deal with some additional terms found in the glossary on the back cover of the student book. Students may have heard many of these words but may not know their definitions. To become familiar with the vocabulary of the environment, students could create their own "Trivial Pursuit"-type activity using terms in the essay, the glossary, and other terms that you may add.

Timeline and Study Sheets II and III

The Timeline provides a historical database about the environment in the United States by dividing significant environmental events into four categories: History, Government, Economy, and Culture. Geography is also incorporated on the Timeline through the inclusion of a pollution map and a population table.

This approach demonstrates to students that issues we face as citizens have many facets and require knowledge from a variety of disciplines. It also helps students to identify causes and effects. In addition, the Timeline points out that environmental problems have evolved over a long time. An introductory page orients students to the Timeline and its use.

Many of the items listed on the Timeline could fall into more than one category. Entries are differentiated between categories as follows:

History —Entries include events such as explorations of the United States, actions that have damaged the environment, or actions people have taken to help the environment.

Government—Entries identify local, state, or national laws or acts designed to protect the environment. Most federal government actions on the Timeline involve two branches (usually the Executive and the Legislative). Some presidential actions that do not have the force of law are included in the history category.

Economy—Entries include important inventions that have affected the environment, show growth of American business, and give information about how much Americans consume.

Culture—Entries describe significant environmental books and events, as well as the founding of several well-known environmental organizations.

Time periods on the Timeline are of varying lengths with more entries in recent decades. Starting in 1960, the entries go decade by decade. The introductory page to the Timeline asks the students to begin to practice using it by answering one question from each of the four categories. Answers are: 1944; Newport Colony; 800 miles; and 1974.

After the students have answered the questions on the introductory page, you will probably want them to read over the entire Timeline period by period. Stress to students that they do not need to memorize all the facts included in the Timeline, but should be aware of them.

Study Sheet II, "Reading the Timeline," takes the students back to specific entries to help them better understand the chronology of different environmental events and to reinforce the idea that as citizens, we can look at environmental issues from historical, governmental, economic, and cultural perspectives. Study Sheet II also defines and highlights conservation as an important theme on the Timeline.

Answers to Study Sheet II are:

1. Jamestown, Virginia
2. Department of Interior
3. more than one trillion dollars
4. Minnesota Mining and Manufacturing (3M)
5. plant one billion trees a year for ten years

1681—Penn says one acre is to be kept forested for every five cleared.

1864—*Man and Nature* by George Perkin Marsh is published.

1935—Soil Conservation Service is created.

1949—*Sand County Almanac* by Aldo Leopold is published.

The CITIZENSHIP CHALLENGE for Study Sheet II asks the students to write a paragraph describing the relationship between population growth and the amount of goods and services people buy. Students use the population table and the economy entries as information from which to draw conclusions about this relationship. Their paragraphs should include the idea that as the population grows, more goods and services are bought. Students who analyze carefully will note that the amount of goods and services bought may double in a given period even though the population has not doubled.

Study Sheet III, "Causes and Effects," uses the Timeline to help students identify the relationships between events—how one event may cause or lead to another.

Answers to Study Sheet III are:

1. California Electric Light Company sells electricity
2. the Transcontinental Railroad
3. a pesticide control act

1956—Water Pollution Control Act
Reason: sewage was being dumped into lakes and rivers

1976—Toxic Substance Control Act
Reason: too many PCBs in the environment

The CITIZENSHIP CHALLENGE for Study Sheet III uses the United States pollution map on page 17 of the Timeline. Students are asked to write a letter to a fellow citizen describing pollution problems in 1990 and encouraging citizen involvement. These letters will vary but should include some description of the nature of the problems (acid rain, toxic waste,

smog, toxic chemicals in fish, and diminishing landfill space), where the problems are the worst (the Northeast, California, and urban areas), and why some locations have more severe problems (population density, weather patterns). To write a thorough letter, students will need to integrate information from the essay, the Timeline, and the pollution map. You may choose to have students complete this CITIZENSHIP CHALLENGE in small groups by writing a joint letter.

Study Sheets IV and V

Study Sheets IV and V relate knowledge about the environment to everyday life and actions that citizens can take (or stop taking) in order to protect the environment. Each student's answers to Study Sheet IV, "My Environmental Diary," will vary. You may want to extend the learning by having the students create a "class diary" by recording on newsprint things that they have done to harm the environment or that they have observed others doing over the course of a week. Hash marks could be used to tally those things that are done most frequently. The class diary might be one way to identify a particular problem that students would later work on as a *Civic Project.*

Study Sheet V, "Tradeoffs and the Common Good," helps students differentiate between the three "Rs"—recycle, reuse, and reduce. It points out that using the three "Rs" may require some sacrifices (tradeoffs) on the part of citizens in order to contribute to the common good and to protect the environment for ourselves and future generations. It is important for citizens to understand that although we might prefer a "perfect" environment, the economic costs of air with no pollution or an absolute ban on timber cutting might be too high. One way for citizens to think about this problem is to consider what would be the best solution for the greatest number of people.

Answers to Study Sheet V are:

Action	*Which "R"*	*My Tradeoff (possibilities)*
1. Shut down air conditioning	Reduce	Get hot, sweaty
2. Buy rechargeable batteries	Reuse	High price for rechargeables
3. Turn off TV in evening	Reduce	Miss favorite shows
4. Sort lunchroom trash	Recycle	Takes time
5. Use paper already used on one side	Reuse or Reduce (use of new paper)	Messy assignments

Students may think of different tradeoffs than those listed. Action number five could lead to some interesting discussion about how the three "Rs" can overlap. It is possible that paper used on both sides could also be recycled.

The CITIZENSHIP CHALLENGE on Study Sheet V asks students to choose one action from among the five that they are willing to take. The first four actions cannot be taken unilaterally—they each involve some negotiation with parents, other family members, or school officials. The fifth action of reusing paper at school could be done unilaterally, although students might want to seek permission before doing so. It is important for students to realize that many actions require cooperation. You may want to ask the students to think of other actions they could take, which "R" would apply, and what the tradeoff would be. Their diary from Study Sheet IV might help get them started.

Maps and Study Sheets VI and VII

Your classroom set of materials includes two map handouts for each student. Each handout has a United States map on one side and a map of *your* state or trust territory on the other. These maps are a resource for Study Sheets VI and VII. You may also feel free to use them or copy them for other class work not related to *CAAP in Action*.

On the back of this guide is a map showing a variety of world pollution problems. Although *CAAP in Action* primarily focuses on local, state, and national environmental issues, this map will help students understand these issues within a global context. You may copy the map as you see fit. It relates well to the concepts that are included in the essay and could be used as a basis for class discussion. The world map could be of particular value as an additional resource for the Study Sheet III CITIZENSHIP CHALLENGE in which students write a letter about pollution problems to a fellow citizen.

Study Sheet VI, "Mapping Environmental Problems," gives students the opportunity to create a United States endangered species map using symbols that they choose for five species. If your students do not know which state goes with the two-letter postal code designations, you may need to start by having them develop a list with the full name of the state and its two-letter abbreviation. A telephone book is a handy and excellent resource for postal code abbreviations.

To extend the learning, you may want students to identify other endangered species (for example, snail darter, panther) and add them to the map. Another possibility would be to have students identify bodies of water in the United States that are highly polluted, create symbols for each, and draw them on the map.

The CITIZENSHIP CHALLENGE on Study Sheet VI requires some research to find out about endangered species in your state. Students could write to the state's fish and wildlife agency, use the library, check with national wildlife organizations or their local chapters, or perhaps go to a local nature center or state park to find the information.

Study Sheet VII, "The Environment and Your State," focuses on your own state or trust territory and on population and population density. Refer students back to the essay and the Timeline map, which indicate that areas of higher population generally have more urgent pollution and other environmental problems.

The CITIZENSHIP CHALLENGE on Study Sheet VII asks students to identify three environmental problems in your state or territory. Having completed Study Sheet VI and come this far in *CAAP in Action*, students may already have identified one or two state-specific problems, but may not yet know three. To identify these problems, students might use the library, read the newspapers, have a class brainstorm and discussion, talk with their parents, write to state agencies, or contact governmental officials. This CITIZENSHIP CHALLENGE could lead to a problem that students can choose to continue with in the *Civic Project*.

Research Project

To take responsible civic action, citizens need to be well informed. The *Research Project* focuses on developing skills in finding and presenting information. By the time students have arrived at the *Research Project*, they may have already identified an environmental topic about which they want to learn more.

The student booklet gives a brief overview of where students may find information on environmental topics and outlines the steps they should follow in conducting the *Research Project*. Several examples of topics are listed.

The booklet also contains a Research Planning Sheet. This is designed to direct the students' research and to emphasize the usefulness of planning before starting work. The planning sheet helps students think about their topic—identifying what questions they have about it, determining where they might find the answers, deciding how they might present their findings, and developing a research schedule. The planning sheet requires your signature before the students begin their research.

You may choose to have students complete the *Research Project* individually or in small groups. It is important that you notify the library media specialist about the *Research Project* so he or she can prepare for the potential onslaught of students. Please remember that library resources may be strained during the time students conduct their research, especially if more than one class is working on *CAAP in Action*. You might want to encourage students not to choose the same topic, thereby alleviating the problem of several students needing the same resource materials simultaneously.

Civic Project

Much of the success of the democratic process depends upon citizens taking informed and responsible action. The *Civic Project* gives students the opportunity to study an environmental problem, consider alternative solutions, choose the alternative they feel is best, and take action. By completing the *Civic Project*, students should begin to understand that citizens can make a difference and that even young citizens can be involved and contribute.

The *Civic Project* is designed to be carried out in groups or as an entire class and to address a local or state issue. The student booklet quotes the slogan "Think Globally... Act Locally!" Use the slogan to help students realize that environmental problems need not be overwhelming—there are effective local actions that citizens can take.

Three steps are included in the student booklet for the *Civic Project:*

1. Choose an environmental problem that is interesting and important to you and your classmates
2. Study the problem carefully
3. Plan and take action

In carrying out step one, you will want to work with the students to select their local or state environmental problem. You will need to decide if you wish to have the entire class work together on one problem or whether small groups will each choose different problems. By this stage of *CAAP in Action*, several local and state problems should have already emerged as students completed their study sheets and their citizenship challenges. The *Research Project* may also have surfaced "hot topics." You may wish to conduct a brainstorm session to get all the ideas out.

Once the environmental problem has been selected, the emphasis is on study and planning before taking action. The problem must be clearly understood and the potential consequences of alternative actions considered before action is taken. The booklet provides a Civic Project Information Sheet to help lead the students through the process. It might be useful if you worked along with the students to guide their efforts in completing the information sheet.

You may want students to complete the first section, "Defining the Problem," on their own first (or with their small group) and then conduct a class discussion to pool all the information and ideas. Once the information has been gathered, research assignments can be made to fill in the gaps. If the problem chosen is one that has already been studied during the *Research Project*, additional research may not be necessary.

The second section of the sheet, "Studying the Problem," can be filled out individually, in small groups, or as a whole class. If individuals fill out this section, it will be necessary to discuss their answers and to share ideas about possible solutions with their small groups or the class before moving on to the third section of the information sheet, "Planning and Taking Action."

This third section of the sheet details the actual action plan and requires your signature before students begin to take action. If you are having students complete the *Civic Project* as small groups, you will want to make sure that the group members' plans correspond. This does not mean that all the plans need to be written exactly alike, but each member should understand his or her tasks, and the individual tasks assigned within the group should not conflict with each other.

If you are working on the *Civic Project* as a class, you may choose to create the plan together on newsprint or the blackboard, with class members either copying it into their booklets or recording their own tasks on the information sheet. Feel free to be as creative as you like. Adapt the information sheet to meet your needs, emphasizing the importance of citizens becoming informed and making careful plans before taking action.

Special Note:
The *Civic Project* provides an opportunity for students to be involved in the community at large and may be an excellent public relations tool for the school. You may wish to encourage your class to complete civic projects that are highly visible and promote interaction between the students and members of the community.

Mastery Test

A mastery test is included in the student booklet on page 31. Students may use their books in answering the questions. Answers are:

A. 4 1849
5 1892
2 1908
3 1956
1 1990

B. 1. F
2. T
3. F
4. T
5. T

C. 1. Reuse
2. Recycle
3. Reduce

D. and E. Answers will vary.

Teacher Resources

There are many organizations concerned about environmental problems. Here is a sampling of them for your reference as your students work on their projects.

Environmental Protection Agency
401 M Street, SW
Washington, DC 20460
(202) 382-2090

Administers federal laws intended to protect and enhance the environment. Engages in pollution control through research, standard setting, monitoring, and enforcement activities.

Greenpeace, USA
1436 U Street, NW
Washington, DC 20009
(202) 462-1177

Employs direct action to confront environmental abuse. Campaigns to stop acid rain, nuclear weapons testing, decimation of marine populations, and ocean disposal of toxic and radioactive wastes and to preserve Antarctica.

Inform
381 Park Avenue, South
Suite 1201
New York, NY 10016
(212) 689-4040

Carries out research and public education to identify and report on practical actions for the conservation and preservation of natural resources.

National Audubon Society
950 Third Avenue
New York, NY 10022
(212) 832-3200

Objectives include management of nature sanctuaries, production of educational television specials on conservation issues, and scientific research to save endangered species.

National Cartographic Information Center
United States Geological Survey-E.F.I.C.
507 National Center
Reston, VA 22092
(703) 860-6045

Exists to help you find maps of all kinds—and much of the data used to compile and print them.

National Wildlife Federation
1400 16th Street, NW
Washington, DC 20036-2266
(202) 797-6800

Through research and education, supports thoughtful use of resources for people and wildlife.

The Nature Conservancy
1815 North Lynn Street
Arlington, VA 22209
(703) 841-5300

Identifies ecologically significant lands and protects them through gift, purchase, or by assisting government and private agencies.

Rocky Mountain Institute
Amory and Hunter Lovins
1739 Snowmass Creek Road, Drawer 248
Snowmass, CO 81654
(303) 927-3851

Advocates energy-efficient technologies.

Sierra Club
730 Polk Street
San Francisco, CA 94109
(415) 776-2211

Objectives include the protection and restoration of the quality of the natural and human environment and use of all lawful means to carry out these objectives.

United States Department of Agriculture
14th Street and Independence Avenue, SW
Washington, DC 20250
(202) 447-2791

Phone listing is for the USDA Information Center. Department includes such federal agencies as Forest Service, Soil Conservation Service, and Agricultural Stabilization and Conservation Service.

United States Department of Commerce
Bureau of the Census
Washington, DC 20233
(301) 763-1990

Sponsors the 1990 Census Education Project to educate students about the 1990 Census and the application of these statistics to everyday life.

United States Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
(202) 586-8800

Phone listing is for the National Energy Information Center. Department includes such offices as Conservation and Renewable Energy and Environmental Restoration and Waste Management.

United States Department of the Interior
Washington, DC 20240
(202) 208-3100

Includes such bureaus as National Park Service, U.S. Fish and Wildlife Service, Bureau of Land Management, and U.S. Geological Survey.

The Wilderness Society
900 17th Street, NW
Washington, DC 20006-2596
(202) 833-2300

Works to preserve wilderness and wildlife and to protect America's forests, rivers, and shorelands.

Worldwatch Institute
1776 Massachusetts Avenue, NW
Washington, DC 20036
(202) 452-1999

Research organization concerned with identifying and analyzing emerging global environmental problems and trends and bringing them to the attention of opinion leaders and the general public.

Here is a selection of books about environmental problems that you might find useful for instructional purposes.

Bookchin, Murray. *The Rise of Urbanization and the Decline of Citizenship*. San Francisco: Sierra Club Books, 1987. Bookchin maintains that cities, originally havens of democratic ideas and principles, have become primary sources of environmental degradation and human despair.

Brown, Lester R. *State of the World 1990*. New York: W.W. Norton & Company, 1990. Focuses on major policy initiatives needed to stabilize the climate, improve air quality, and reduce poverty.

Caplan, Ruth. *Our Earth, Ourselves*. New York: Bantam Books, 1990. A comprehensive resource that puts individuals and communities at the helm of the burgeoning environmental movement.

Caufield, Catherine. *In the Rainforest*. New York: Random House, 1985. A history of the Amazonian rainforest and its indigenous peoples; examines the destructive effects of colonization, industrialization, and other factors.

Day, David. *The Doomsday Book of Animals: A Natural History of Vanished Species*. New York: Viking Press, 1981. A comprehensive reference work on the natural history of extinct plant and animal species.

The Earth Works Group. *50 Simple Things You Can Do to Save the Earth*. Berkeley, Calif.: Earthworks Press, 1989. A practical, entertaining, and informative guide to the things individuals can do to help protect the earth.

Ehrlich, Paul, and Anne Ehrlich. *Extinction: The Causes and Consequences of the Disappearance of Species*. New York: Ballantine, 1981. The authors examine the political, aesthetic, ethical, and ecological aspects of species extinction.

Grant, George. *Technology and Justice*. Notre Dame, Ind.: University of Notre Dame Press, 1986. Six essays on the impact of technology on modern life and the environment covering such topics as technology, computers, and euthanasia.

Hanson, Philip P., ed. *Environmental Ethics: Philosophical and Policy Perspectives*. Burnaby, B.C.: Simon Fraser University Press, 1986. A collection of seventeen essays on topics ranging from animal rights to environmental management and public policy.

Hays, Samuel P. *Beauty, Health, and Permanence: Environmental Politics in the United States, 1950-1985*. New York: Cambridge University Press, 1987. A historical account of the transition from the traditional conservation ethic to current environmentalism.

McKibben, Bill. *The End of Nature*. New York: Random House, 1989. McKibben argues that global warming, the destruction of the rainforest, and environmental pollution are symptomatic of our intellectual and physical disregard for the natural world.

Nash, Roderick. *The Rights of Nature: A History of Environmental Ethics*. Madison: The University of Wisconsin Press, 1989. Traces environmental thinking from the 1700s to the present.

Stokes, Samuel, and Elizabeth Watson. *Saving America's Countryside: A Guide to Rural Conservation*. Baltimore: Johns Hopkins University Press, 1989. This book provides excellent information on rural, small town, and historic landmark preservation.

CLOSE UP
FOUNDATION

January 1991

Dear CAAP in Action Parent:

We are delighted that your child is participating in an innovative and exciting citizenship program that is being administered by the Close Up Foundation with the cooperation of the National Association of Elementary School Principals (NAESP). CAAP (Civic Achievement Award Program) in Action is fully funded by Burger King Corporation, an organization that continues to demonstrate its corporate responsibility and commitment to strong educational programming.

CAAP in Action is a citizenship education program focusing on the environment and designed specifically to help build a solid base of civic awareness for students in grades five through eight.

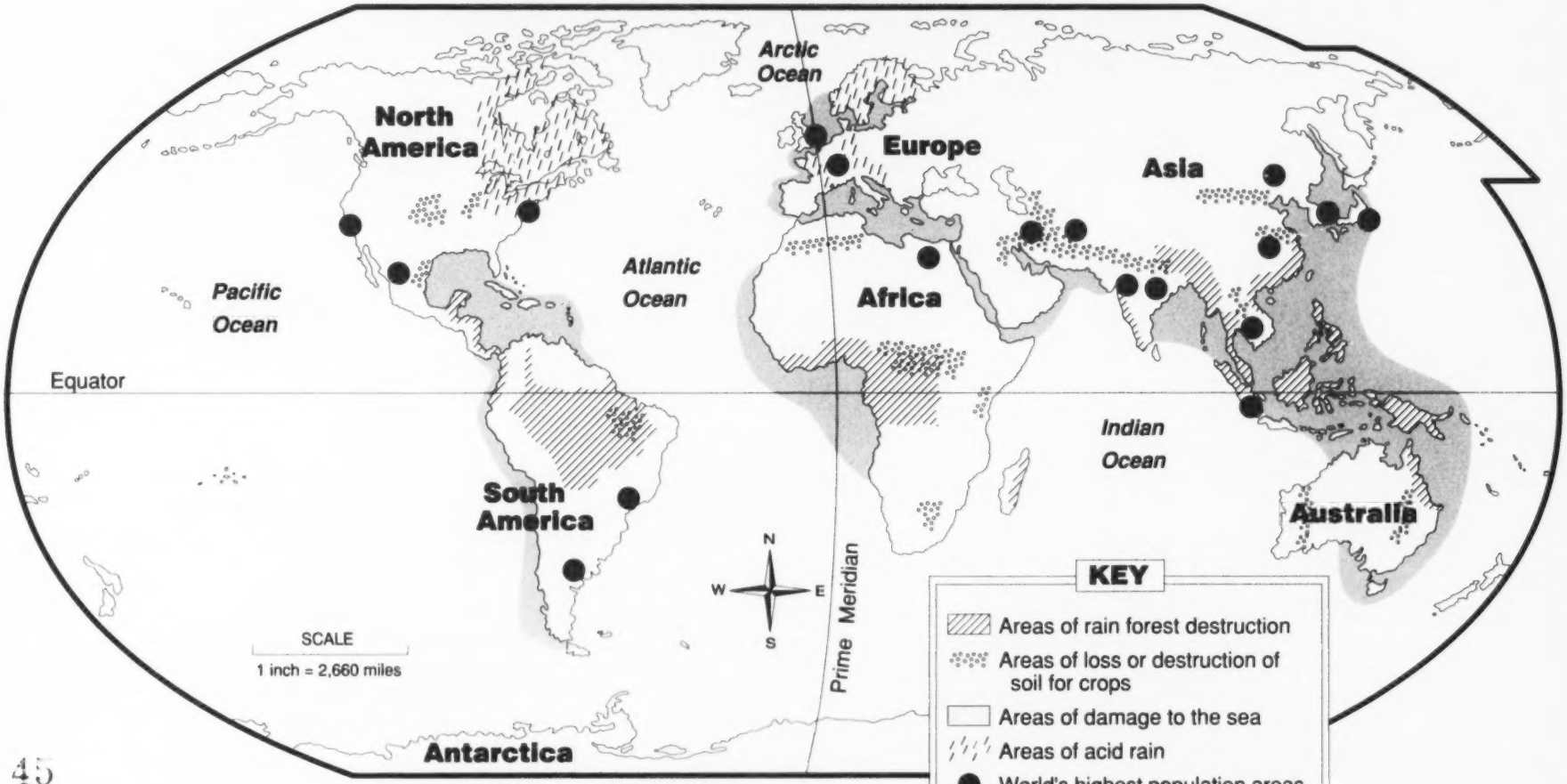
We hope you will take a moment to look over the student book and become familiar with its content and format. One of our goals is to have parents and other family members participate with their children in as many educational activities as possible. The extent of involvement can range from simply becoming familiar with the program to engaging with your child in a civic action/ community service project.

Burger King officers in Miami, Florida, know that your child's school is taking part in CAAP in Action and would appreciate receiving any comments you might have about the program. Please let them and us know what you think.

Sincerely,

Mary Jane Turner
Director
CAAP in Action
(800) 356-5136

Some World Pollution Problems



Base map provided courtesy of Rand McNally

CLOSE UP FOUNDATION
Civic Achievement Award Program
Close Up Foundation
44 Canal Center Plaza
Alexandria, Virginia 22314

893-910